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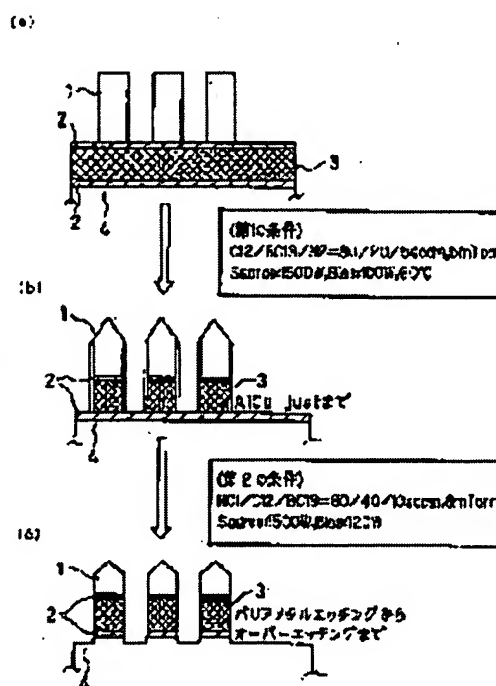
(72)Inventor : UEDA YASUHIKO

(54) METHOD FOR DRY ETCHING METAL WIRING

(57)Abstract:

PROBLEM TO BE SOLVED: To suppress extension of a base barrier metal to minimum and completely eliminate residual after processing, by etching using a plasma to which nitrogen gas is added, and then etching using a mixed gas that contains hydrogen chloride gas.

SOLUTION: At the time of forming an aluminum wiring having a stacked structure of TiN/AlCu/TiN, a photoresist 1 is used as a mask, and first conditions wherein nitrogen gas N₂ is added as an additional gas are applied until AlCu₃ is completely etched. The first conditions are; Cl₂/BCl₃/N₂= 80/20/5 sccm, 5 mTorr, source: 1500 W, bias: 100 W, 60°C. Then, second conditions wherein hydrogen chloride gas is mainly used are applied and a lower layer TiN₂ is etched. The second conditions are; HCl/Cl₂/Bcl₃=80/40/10 sccm, 8 mTorr, source: 1500 W, bias: 120 W.



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